The Comprehensive Strategic Plan for the Eradication of Bovine Tuberculosis - May 2004

Introduction:

The Strategic Plan for the Eradication of Bovine Tuberculosis – May 2004 contains six categories of Action Steps. They are: Eradication Strategies (A), Wildlife Management (B), Laboratory and Diagnostic Support (C), Surveillance (D), Information and Education (E), and Risk Mitigation (F). The latter two Action Steps (E and F) were added to the four Action Steps previously identified in the October 2000 Strategic Plan. Each Action Step contains a number of Action Items. Costs identified for each Action Item are for funding over and above current funding for the Tuberculosis Eradication Program.

Action Step – Eradication Strategies (A)

Action Item (A1):
Pay indemnity for reactors, suspects, and exposed livestock up to fair market value, less salvage.

Background:
The Bovine Tuberculosis Eradication Program has traditionally paid an indemnity for reactors and exposed animals. This indemnity compensated herd owners for the losses incurred by program activities. Initially, the indemnity limits were consistent with the relative market value of the animals.

Livestock entities also specialize in high value stock that far exceeds the limits of federal indemnity.

Action Required:
To keep up with the ever-changing livestock industry and to increase the speed at which high-risk animals are removed from the general livestock population, indemnity rates need to be flexible and compensate the owner for the appraised value of the reactor, suspect, or exposed animal. Indemnity should be granted at fair market value for all infected or exposed livestock and not just cattle, bison, and captive cervids.

The appraisal and indemnification process needs to be stream-lined so that reactors can be sacrificed within 15 days as required by the UM&R.

Costs (additional) for A1 (Indemnity for reactors, suspects, exposed)

Cost Item	Calculations	Additional Costs
Indemnity for FY 03	FY03 (1,943,827.00) * 20%	$388,765.40
Number of CCT reactors or suspects from tests on dairy replacements	Estimate testing 2 million cattle, 2% CFT responders, 2% taken as CCT suspect or reactors	1200
Cost for Dairy replacement reactors/ suspects	Indemnity + transportation+ destruction= 3,000/animal	$3,600,000.00

Accreditation Testing- Bovine	5000 herds * 40 head*.02(CFT response rate*.02(CCT Reactors/Suspects*3000)	$240,000.00
Accreditation Testing- Cervids	2050 herds * 20 head * .05 SCT suspects * .05 CCT suspects *2000	$205,000.00
All CCT Testing Associated Costs	8Hr VMO time, mileage, shipping to NVSL= 350.00/head (Movement testing 1200 +Accreditation Testing 80 Bovine and 103 cervids)	$484,050.00

Estimated Costs (additional) **$4,917,815.40**

Action Item (A2):
Provide for depopulation of all currently known and newly affected cattle, bison, and captive cervid herds according to Uniform Methods and at replacement value plus costs associated with depopulation.

Background:
Currently in our national Bovine Tuberculosis Eradication Program, the producer has the option of herd depopulation with exposed animal indemnity or herd quarantine with a test and removal scheme. Experience over the past 15 years in herds electing a test and removal program has demonstrated the effectiveness of this option to be no more than 15% successful in eliminating infection. This low success rate is largely a result of persistent and recurrent infection in large dairies.

Depopulation of M. bovis-infected herds is the most dependable method of eliminating the disease. However, herd depopulation for large dairies has not always been achievable. In some cases, owners' are not willing to depopulate because of concerns regarding loss of irreplaceable genetics often acquired over several gener~~ati~~ons of breeding management. But in other cases, the decision is made because of economic considerations such as when substantial differences occur between appraisals based on fair-market value of inventory and replacement value necessary to obtain equitable production levels. Other economic considerations related to depopulation include producer costs associated with required cleaning and disinfection of premises, downtime between liquidation and restocking, and ability to compensate and retain employees during the transition period.

Testing in these herds has been sufficient to remove infected dairy herds from quarantine, however, it has been unable to prevent these herds from becoming re-infected. In the past, this problem was evident in the El Paso milk shed of Texas. However, the inability to depopulate affected dairy herds in Michigan and New Mexico is currently of high concern. Herd depopulation gives a virtual certainty that a herd will not be a continued source of infection to the nation's livestock populations.

Action Required:
Depopulation of all known infected and high-risk herds (as determined by the Designated Tuberculosis Epidemiologist), would advance program goals faster than any other action. Continued mandatory depopulation of all currently known and newly infected herds would ensure that program timelines are met and that the risk of re-

infecting the nation's livestock populations is minimized. Therefore, approval of state animal health authorities will be sought in order to change the Uniform Methods & Rules and start mandatory depopulation of tuberculosis-infected cattle, captive bison, and captive cervid herds.

Current methods for determining compensation for herd depopulation must be revised to include replacement value of livestock (to maintain current production levels) and other justifiable expenses related to depopulation and restocking.

Depopulated herds will be required to institute sound biosecurity and management practices designed to prevent re-infection before they can repopulate. Premises containing repopulated herds that become re-infected with tuberculosis (and therefore need to be depopulated again) will be placed under extended quarantine and repopulation with susceptible animals will not be allowed until tuberculosis risk level is determined to be minimal.

Costs (additional) for A2 (Depopulation)

Indemnity for FY 03	FY03 (19,967,670.00) * 20%(Inc final number by another 20% for change to replacement value and associated costs.)	$4,792,240.80

Estimated Costs (additional) **$4,792,240.80**

Action Item (A3): see Action Item F3 under Action Step Risk Mitigation (F)

Action Item (A4):
Finalize the new status levels for cattle, bison, and captive cervids.

Background:
APHIS is committed to enhancing program standards and has developed new program status levels that more accurately reflect the relative risks of bovine tuberculosis infection.

Action Required:
Provide a tuberculosis staff position to finalize the new status levels to better understand the risks associated with tuberculosis transmission at each level of status.

Incorporate the new levels into the National Bovine Tuberculosis Eradication Program to aid in mitigating the risks of tuberculosis exposure from animals imported from foreign trading partners or from animals moved from domestic areas of high risk.

International trading partners will be able to apply for equivalency to our program based on valid risk levels.

Include the level of slaughterhouse surveillance as a factor when determining state status.

Monitor the tuberculin test response rates from accredited veterinarians.

Costs (additional) for A4 (TB Status Levels)

One Staff GS 13 Position	Terry Beals Figure which includes salary benefits, support costs= 124,218.96	$124,218.96

Estimated Costs (additional) $124,218.96

Action Item (A5):
Conduct reviews and risk assessments for domestic and international regionalization requests.

Background:
The Deputy Administrator of Veterinary Services approves domestic and international regionalization requests. Annual reviews are required.

Action Required:
Review regionalization requests annually to reflect progress toward eradication goals and ensure minimum program requirements. The review will also outline new goals and objectives that will be met during the next fiscal year. This review must document the performance measures that are included in the zoning agreement to maintain status.

Reviews may be performed more often as risk indicates. Exported cattle later found infected with tuberculosis might cause more frequent status reviews.

If bovine tuberculosis has been disclosed in free-ranging animals within a zone or region, then a tuberculosis management plan for wildlife must be approved to maintain status within the zone or region. The management plan is a separate document generated by the entity requesting zoning. It is aimed at showing the steps that will be taken to prevent transmission of disease from the endemic source to domestic livestock.

In many cases, where entire countries are requesting equivalency, an annual paperwork review may be all that is necessary for that country to maintain status. However, when a country wishes to regionalize or zone areas of differential disease status, then a site visit would be required to document the movement control and disease surveillance measures within that zone or region.

Costs (additional) for A5 (Conduct reviews for regionalization)

Review Costs for FY 03	Estimated FY 03 increased by 50,000	$50,000.00

Estimated Costs (additional) $50,000.00

Action Item (A6): Institute a standard providing that over 75 percent of all feedlot cases must be traced beyond the feedlot to maintain status.

Background:
The majority of tuberculosis cases seen at slaughter originate from feedlots. In the past, a majority of these cases originated in Mexico. When Mexico instituted a national tuberculosis eradication program, and when the United States began restricting the

importation of dairy animals from Mexico, the numbers and proportion of Mexican-origin feedlot cases declined. The majority of cases that are not attributable to Mexican origin are not usually traced beyond the feedlot due to lack of proper identification records.

Action Required:
Approximately 20 percent of feedlot-origin tuberculosis cases have an unknown origin due to lack of proper identification. The feedlot and the state need to be held accountable for these unknown cases in terms of feedlot certification and tuberculosis state status. A 75 percent success rate of tracing a case beyond the feedlot is a reasonable goal.

Because tuberculosis is a slow moving disease that may not be discovered until years after transactions have taken place that disseminated the disease, require cattle dealers and feedlots to maintain records for a minimum of 5 years to facilitate tracing.

Require annual inspection of records to maintain certification.

Require cattle entering and leaving a feedlot to have permanent individual identification allowing tracing to herd of origin. Missing identification will be promptly replaced upon discovery of loss. Adoption of a national cattle identification system will assist with meeting this goal.

Costs (additional) Associated with A6 (Feedlot Tracing)

No Known Additional Costs

Action Item (A7):
Enhance use and collection of identification from dairy animals.

Background:
Ability to trace infected dairy cattle back to herds of origin is adversely affected by lack of a modern identification system. This is a serious drawback to conducting proper epidemiological investigations and impedes efforts to eliminate foci of infection. Official identification is not replaced when lost. Furthermore, easily accessible computerized records linking ID to farms of origin are not available. Also, it is often not possible to link ID to sequential premises of ownership, even if the ID is retained in the animal. Finally, proper collection of ID in association with the correct carcass and samples at time of slaughter is not always achieved. Enhanced utilization of ID and its proper collection would improve traceability and aid in epidemiological investigations.

Action Required:
Implement a national animal and premises identification system as soon as possible. All cattle will be required to have permanent individual identification allowing tracing to herd of origin within 48 hours. Records linking each bovine to all premises where it has resided should be computerized and easily accessible to the proper authorities. Identification, including its links to all pertinent information, will be promptly replaced when it is lost.

As an interim procedure until the national animal identification system is in place, all cattle will be required to bear permanent individual eartag identification, allowing for tracing to herd of origin, before leaving the premises where they reside.

Facilitate animal tracking by providing funding for all 50 states to participate in an electronic permit/health certificate program.

Require collection of all individual identification at slaughter. Ensure that it is correlated to the appropriate carcass and samples.

Costs (additional) Associated with A7 (Use and Collection of Identification)

Cost for Identification of all Dairy Animals	9 Million dairy cows have one calf per year to tag, Tag Cost $0.03, Add Administrative costs $0.02	$450,000.00
Fund electronic permits and CVIs in 50 states	Estimate provided to USDA on 4/12/04 by Global VetLink	$7.5 million

Estimated Costs (additional) $7,950,000.00

Action Item (A8):
Monitor human cases of M. bovis in the United States

Background:
While it is probable that most human cases of Mycobacterium bovis in the United States are imported or date back to infection occurring decades ago, it is, nevertheless, important to gain an understanding of the nature and epidemiology of these infections when they are identified. On the rare occasion, a confirmed human case of M. bovis could be the sentinel drawing attention to a previously unidentified focus of livestock infection. Conversely, a human case of M. bovis could potentially be of risk to livestock under the right circumstances. Therefore, we should take advantage of all the epidemiological information we are fortunate to have.

Action Required:
Confirmed human cases of Mycobacterium bovis documented by state public health officials should be provided annually to the state veterinarian. This report should include age and geographic location of each case, as well as epidemiological findings that indicate probable mode of infection and whether the case is likely to have been imported. This information should be included as part of the each state's annual TB program report.

The state veterinarian will notify appropriate state public health officials of the location and occurrence of laboratory-confirmed cases of Mycobacterium bovis in livestock.

Costs (additional) Associated with A8 (Monitor human cases)

No Costs Associated

Action Step: Wildlife Management and Tuberculosis in Non-regulated Species (B)

Action Item (B1):
Assist state wildlife agencies in the eradication of tuberculosis from wildlife

Background:
Eradicating tuberculosis among free-ranging wildlife is more problematic than among domestic animals because management tools are fewer in number, labor-intensive, expensive, and unproven. Consequently, prevention of the introduction, establishment, and maintenance of tuberculosis is the most efficient technique for dealing with tuberculosis in wildlife.

Tuberculosis eradication from wildlife requires a cooperative effort minimally involving state and federal wildlife management and animal health agencies, public health agencies, and multiple interest groups. The state wildlife management agency has authority and responsibility for free-ranging wild animals and must play a central role in tuberculosis eradication efforts directed at wildlife.

Disease eradication strategies should be initiated when tuberculosis is identified among wildlife in order to protect domestic animals, wildlife resources, and humans. An adaptive management strategy should be employed that is modified as new techniques and information become available regarding tuberculosis epidemiology and management.

Action Required (B1.1):
Promotion of measures to prevent introduction, establishment, and maintenance of tuberculosis in wildlife:

Transmission of tuberculosis between wildlife and livestock is a two-way street and barriers should be erected or enhanced to preclude transmission. Wild animals, due to natural dispersion, are less likely to maintain diseases such as tuberculosis and activities that unnaturally inflate populations or artificially congregate wildlife, especially supplemental feeding and baiting of cervids, should be prohibited or minimized to reduce the likelihood of disease transmission and maintenance among wild animals. (see Action Item E6 for activities to enhance)

Action Required (B1.2):
Surveillance to enhance early detection and eradication of tuberculosis in wildlife:

Early detection increases the likelihood of success in eradicating tuberculosis from wildlife. Passive surveillance for tuberculosis should be enhanced by providing informational material, including publication of lesion photos, in brochures provided to hunters. Active tuberculosis surveillance should be incorporated into chronic wasting disease surveillance activities being conducted by state wildlife management agencies under annual Cooperative Agreements with APHIS-Veterinary Services. Tuberculosis surveillance should be prioritized by state and region according to risk factors including cervid population densities, artificial management activities that promote disease transmission, historical incidence of tuberculosis among traditional and alternative

livestock, etc. (see Action Items E6 for activities to enhance passive surveillance for TB by developing and disseminating educational materials to hunters, wildlife managers, deer and elk processors and others working with hunter-killed cervids).

Action Required (B1.3):
Early, aggressive, and sustained management intervention to eradicate tuberculosis in wildlife:

Expanded wildlife and livestock surveillance is warranted to define the scope of the problem when tuberculosis or suspect lesions are found in one or more wild animals, as well as to monitor progress of eradication efforts. When a focus of tuberculosis is found in wild animals, control measures minimally should include immediate cessation of activities that increase disease risks, particularly supplemental feeding and baiting, as well as population density reduction to the level at which tuberculosis is no longer maintained. The goal of population reduction and the area in which this is to occur must be based on surveillance results and the local biology of the affected wildlife species. State wildlife management and collaborating agencies must identify, promote, evaluate, and appropriately modify the methods under which population reduction is to be effected. Funding and other assistance from APHIS should be provided under Cooperative Agreements that clearly define agency responsibilities, as well as management strategies, methods, and goals.

Action Item (B2):
Promote measures to prevent tuberculosis transmission between wildlife and livestock

Background:
Eradication of tuberculosis that has become established in free-ranging wildlife is difficult and likely will require a sustained effort over a long period of time. However, measures can be taken to prevent infection of livestock, as well as other wildlife, as eradication activities continue. Mitigation of the risks of transmission from wildlife to domestic animals may allow “compartmentalization” of tuberculosis to only the wildlife population currently infected.

Action Required (B2.1):
Develop and disseminate information, as well as educate producers, veterinarians and agriculture extension agents, regarding risk factors associated with transmission of tuberculosis between wildlife and livestock. (see Action Item E6)

Action Required (B2.2):
Wildlife damage management agents should conduct field visits and consultations to producers providing biosecurity recommendations to reduce exposure of livestock to infected wildlife or to materials contaminated by infected wildlife.

Financial assistance, provision of materials and/or labor should be made available to producers in affected areas to enhance on-farm biosecurity.

Herd management plans must include adequate biosecurity measures for repopulated premises on which herds have been depopulated and for which the owner has received

indemnity. Note: full indemnification for repopulated herds may not provide sufficient incentive to practice appropriate biosecurity.

Cost **$1.00 million**

Action Item (B3):
Promote research into the epidemiology and management of tuberculosis among wildlife

Background:
Limited numbers of tools are available for eradicating tuberculosis from free-ranging wildlife. Methods currently available primarily comprise population density reduction and prohibition of activities that enhance tuberculosis transmission. Unfortunately, there is no guarantee that these strategies will be successful. Thorough knowledge of the epidemiology of tuberculosis in wildlife and livestock may identify additional or alternative eradication methods. Additionally, the efficacy of current and future management actions must be continuously evaluated to identify the best strategies and methods for tuberculosis eradication.

Action Required (B3.1):
Research should continue into the epidemiology of tuberculosis in wildlife and livestock in order to identify key control points at which transmission among wild animals and transmission between wildlife and livestock can be precluded. *(Funding for disease aspects of this research should be contained with the budget for ARS-NADC, which conducts most of this work. Estimate - $500,000.*

Action Required (B3.2):
Thorough understanding of the epidemiology requires complete information regarding the behavior and other biological aspects of the affected wildlife species. Research also should be directed at the effects of eradication measures on the biology of the wild animals, as well as on the prevalence of tuberculosis in wildlife. *(Funding should be provided through a Cooperative Agreement, as described under Action Item B1, between APHIS and the state wildlife management agency.)*

Action Required (B3.3):
Additional research is necessary to identify techniques to enhance livestock biosecurity, including physical or other barriers between wildlife and livestock, to prevent tuberculosis transmission. *(Funding should be provided to APHIS-Wildlife Services for this research -$200,000 .)*

Action Required (B3.4):
Research should be directed toward additional eradication measures including vaccination of wildlife and/or domestic livestock, diagnostic techniques including blood tests for deer and elk, removal of infected and exposed wild animals from infected populations, and other techniques. *(Funding should be provided to the state wildlife management agency through a Cooperative Agreement with APHIS, as described in Action Item B1, for development and evaluation of eradication techniques, and to ARS-NADC for vaccine research. ARS estimates for vaccine research are $500,000)*

Note: The following Action Items from Action Step Action Step - Wildlife Management and Tuberculosis in Non-regulated Species (B) are still under review.

Action Item (B4):
Establish task force against TB that combines zoo and non-program species groups, as well as state and federal animal health officials

Action Item (B5):
Develop TB testing protocols for zoo and non-program species. Provide comparative cervical test training to zoo vets and provide for procedural and test data collection, analysis, and information dissemination.

Action Item (B6):
Implement an exotic animal facility and herd classification system for TB.

Action Step - Laboratory and Diagnostic Support (C)

Action Item (C1):
Revise policy concerning laboratory submission procedures (whole herd, zoos, wildlife, captive cervids).

In order to support the revised Strategic Plan, the TB submission policy table must be revised. Revision will depend on the new NVSL laboratory including size, personnel, equipment and desired turnaround time.

Action Required:
Remove the TB submission table in the year 2000 Strategic Plan.

Expand the histopathology service for slaughter cattle. Use the expanded service of NVSL pathology service and the California Lab service as a model to place other State Laboratories into service required to give 24 to 48 hour service.

Figure the fee for service to Program at $25 per specimen read by a pathologist at a State Laboratory (24-48 hr turn around time). Shipping costs are estimated at $40 per sample for overnight delivery.

Costs (additional) Associated with C1 (Expanded sample handling to other laboratories)

Histopathology	10,000 additional samples per year performed at other laboratories	$250,000.00
Shipping costs	10,000 additional samples	$400,000.00
Estimated Costs (additional)		**$650,000.00**

Action Item (C2):
Evaluate new technologies for the detection of the organism or disease.

Continue new test evaluation when new tests become available.

Provide Bovigam test for widespread use in infected herds. This will require the use of State laboratories to give over night access to the field staff to submit samples. This will require the NVSL or manufacturer to provide training, funding for kits and increased personnel in state laboratories for running the test.

Action Required:
It is estimated that a total of 10,000 samples per year for Bovigam testing will be required if interstate testing of all dairy animals is instituted along with infected herds and suspect cattle on tracebacks. Each test would cost $30 for kit, tech and data processing plus $40 per sample to ship.

Action Item (C3):
Transfer Polymerase Chain Reaction (PCR) technology to NVSL.

PCR has been transferred to the NVSL from the NADC. Personnel have been hired to perform the test, but need funding for personnel, supplies and equipment to continue to support technology transfer now that the NADC no longer provides the service to APHIS. NVSL has hired a GS-13 Pathologist and a GS-8 lab tech to perform the tests.

Action Required:
PCR is currently being performed on all compatible Mycobacteriosis cases. Specific funding support for personnel in the NVSL Pathobiology Lab (PL) should be provided. Current personnel supporting the PCR testing includes 1 GS 13 Pathologist and 1 GS 8 Lab tech.

Action Item (C4):
Transfer DNA fingerprinting technology to NVSL

Restriction Fragment Length Polymorphism (RFLP) technology has been transferred from the NADC to the NVSL. Personnel have been hired to perform the test, but need funding for personnel, supplies and equipment to continue to support technology transfer now that the NADC no longer provides the service to APHIS. RFLP has been requested on all *M. bovis* cases and has increased with the newly diagnosed herds in NM, AZ, CA, TX and MI. The NVSL has hired 1 GS-13 molecular microbiologist, 1 GS-8 lab tech and 1 GS-7 lab tech to perform the necessary tests.

Action Required:
DNA fingerprinting techniques need to be harmonized with Canada and Mexico so that new isolates can be compared properly. New molecular diagnostic techniques (AFLP & spoligotyping) need to be validated for *M. bovis* isolates and implemented into the NVSL.
Personnel for the NVSL DBL-Mycobacteria Lab includes 1 GS 13 Microbiologist and 1 GS 8 lab tech and 1 GS 7 lab tech – Salary, benefits and support costs = $248,466 per year; supplies and equipment = $200,000.

Costs (additional) Associated with C2 (Increased use of Bovigam and evaluation of new technologies), C3 (PCR testing), and C4 (DNA fingerprinting)

Expansion of use of Bovigam	10,000 samples at $30 for each kit, tech time and data processing plus $40 for shipping costs	$700,000.00
Cost for PCR testing	Personnel plus support costs (1-GS 13 and 1 GS 8)	$188,578.00
Cost for PCR testing	PCR supplies and equipment	$100,000.00
Cost for DNA fingerprinting	Personnel plus support costs (1 GS 13, 1 GS 8 and 1 GS 7)	$248.466.00
Cost for DNA fingerprinting	Equipment and supplies	$200,000.00

Estimated Costs **$1,450,000.00**

Action Item (C5):
Increase laboratory capacity at NVSL for testing 10,000 samples.

Capacity at the NVSL has increased while funding has decreased. Current TB budget at the NVSL for FY04 is $363,147. It was $365,809 in FY03 and $394,216 in FY02. The NVSL has hired the necessary personnel to handle 5,000 samples per year at the Pathobiology Lab. This consists of 2 GS-13 full-time pathologists and 2 full-time GS-7 lab techs.

The salary, benefits and support costs = $366,214 per year; supplies and equipment = $100,000 per year. Shipping costs are estimated at $40 per sample. 5000 samples = $200,000. TB kit includes sample for histopathology and culture.
Total funds needed = $666,214.

The NVSL has hired the necessary personnel to process 3600 samples per year. Samples are first screened using histopathology and those samples with definitive diagnoses such as tumors and systemic fungus are not processed which is approximately one third of the samples submitted. This consists of 3 GS-12 microbiologists and 3 GS-7 lab techs. The salary, benefits and support costs = $490,036; supplies and equipment = $200,000 per year.
Total funds needed = $690,036

Total funds needed for processing 5,000 samples per year (histopathology and culture) = $1,356,250 per year.

Costs (additional) Associated with C5 (double NVSL Pathobiology Lab capacity to 10,000 samples per year)

Estimated Costs **$2,712,500.00**

Action Item (C6):
Evaluate tests for diagnosis of tuberculosis in captive cervids

Research and validation of new diagnostic tests for elk and white-tailed deer is needed. The Cervigam and other serological tests need to be validated for new cervid species.

Action required:

ARS-NADC currently research proposals on new diagnostic tests for elk and white-tailed deer should be funded. Costs for those proposals are estimated at $450,000 per year for 3-5 years.

Costs (additional) Associated with C6 (ARS research)

Total annual cost	**$450,000.00**

Action Step – Surveillance (D)

Action Item (D1):
Review all state programs and regulations for bovine tuberculosis reporting.

Action required:
Coordinate and integrate the monitoring and surveillance activities of the state/federal animal health and public health sectors. Establish administrative arrangements between all sectors to facilitate immediate cross notification of cases or outbreaks.

Promote monitoring, surveillance and control programs in high-risk production areas for cattle bison, and captive cervids. All animal health sectors must ensure that contact tracing is carried out, area outbreaks are recognized, and epidemiology is monitored.

Require accredited veterinarians to be trained and approved as “designated accredited veterinarians” for conducting TB testing in each species as they currently are for cervids. This will ensure they are current on the TB testing technique and reporting criteria.

Resource Requirements: Utilize current personnel

Action Item (D2):
Review the memorandum of understanding between FSIS and APHIS for bovine tuberculosis tissue collection at slaughter to improve routine surveillance at slaughter plants.

Action required:
Update the memorandum of understanding between FSIS and APHIS for bovine tuberculosis tissue collection at slaughter.

Utilize the local AVIC, state veterinarian and their respective field personnel to convey the expected granuloma submission rate of 1 per 2000 adult cattle slaughtered (as specified in the TB UM&R) and provide routine feed back to plant personnel.

Resource Requirements: Utilize current personnel.

Action Item (D3):
Increase Point Concentration Monitoring using inspection and collection of tissue samples from cattle, bison, and captive cervids at slaughter.

Action required:

Continue to closely monitor major slaughter plants most critical to the tuberculosis surveillance program. Prioritize collection of tissue samples at plants that slaughter adult cattle. The expected rate and number of granuloma submissions needs to be identified by plant and state and effectively communicated to meat inspection personnel, plant management and program officials. The minimum expected granuloma submission rate for adult cattle is specified in the UM&R as one per 2000 animals slaughtered.

Develop and implement efforts with state meat inspection agencies to ensure that surveillance for TB becomes a priority in facilities under their jurisdiction, as well. Develop an incentive awards program for state meat inspection personnel for identifying cases that result in detection of affected herds, similar to awards currently available to FSIS personnel.

Assure that all individual animal identification is routinely collected and accurately correlated to each carcass throughout the inspection process. All such identification devices are to be retained and submitted with specimens when suspicious lesions are detected.

Include surveillance of ante-mortem condemned carcasses.

Use the Secretary's office, if necessary, to assure adequate collection by FSIS inspectors. If this is still not successful, then place APHIS personnel in the plants with in adequate TB sample submissions.

Resource Requirements: Assume that one-half of the forty (40) major plants will need to have an APHIS personnel assigned in order to obtain adequate TB surveillance. (Twenty APHIS Animal Health Technicians)

Incentive awards for state meat inspection personnel.

Assume 5 submissions per year result in a confirmed case of TB that successfully results in the finding of a new TB affected cervid, cattle, or other livestock herd.

Assume that each of those submissions made by a lay inspector at a plant with an equal award paid to the inspector and veterinarian.

Costs (additional) Associated with D3 (increase sampling at slaughter)

20 AHT's in cow-kill slaughter plants	**$1,200,000.00**
Estimated incentive award cost for state meat inspection personnel (5 confirmed submissions at $3,750 each for lay inspector and veterinarian submitter)	**$37,500.00**
Total (additional) cost (rounded)	**$1,250,000.00**

Action Item (D4):
Monitor Cervid slaughter at specialty plants not inspected by FSIS or State meat inspection.

Action Items:

Establish a voluntary inspection program for the slaughter of captive cervids at specialty plants. Providing such service would enable tuberculosis surveillance for species not currently inspected.

Establish a cervid TB slaughter surveillance program with definitive criteria and goals. The program should define submission targets based on the number of cervid slaughtered in the state. Additionally, the program should be monitored to verify compliance with inspection, tissue submission rates and validate the surveillance based on the numbers of samples submitted.

Encourage FSIS to re-classify cervids (and exotic hoof stock) as "amenable species" in order to provide inspection services without user fees.

Resource Requirements: 31 states have state meat inspection agencies (28) or otherwise require inspection of non-amenable species (3). Utilize AVIC and state veterinarian to develop relationships with those entities to ensure surveillance objectives are accomplished. Utilize existing state/federal field personnel to develop relationships with individual plants.

Employ an APHIS AHT, or through cooperative agreements a state AHT, in each of the remaining 17 states that allow captive cervid farms or ranches to develop a TB surveillance program in plants that slaughter cervids. (17 APHIS Animal Health Technicians)

Action Item (D5):
Monitor wild cervids killed during hunting season

Costs Associated with D5 (slaughter surveillance of captive cervids)

17 AHT's @ $60,000 per year	**$1,000,000.00**
Total cost	**$1,000,000.00**

Actions Required:

Start a voluntary TB inspection program with all cooperating states, during hunting seasons, or during periods of select culling, by state or federal wildlife agencies. Collect and submit tissues from lymph nodes of the head and viscera, if available. A veterinary medical officer or wildlife veterinarian on a part time basis, depending on the scope of the survey, can do this. If necessary, lay staff could be trained to collect the samples possibly increasing the size of the survey. Providing such service would enable tuberculosis surveillance for populations not currently inspected.

Provide training and financial support, as needed, to allow wildlife agencies to incorporate TB surveillance into ongoing CWD surveillance programs.

Resource Requirements:

Utilize existing state and federal wildlife biologists and technicians.
Costs for laboratory evaluation of specimens, see Action Item D9.

Action Item (D6):
Maintain aggressive levels of surveillance testing of livestock herds in Michigan.

Action Required:
Maintain surveillance testing in all areas of the state, at levels that will complement surveillance at slaughter, and will enable detection of TB infection at low prevalence rates on a herd basis.

Action Item (D7):
Increase the number of herds under disease free certification in each state to a pre-determined level to ensure adequate disease monitoring (sentinel surveillance) for respective geographic regions.

Action Required:

Provide special recognition to states that enroll a high percentage of their cattle and bison herds in an accreditation program and to conduct annual testing for TB.

Provide fee basis payments to veterinary practitioners to enroll cattle and bison herds in herd status programs in all states. Provide fee basis payments to veterinarians to enroll captive cervid herd owners in a TB accredited or qualified herd status program and to conduct herd testing for TB.

Extend annual herd testing requirement for accredited free herds to two or three years to maintain free herd status in Modified Accredited Advanced and Accredited Free states.

Provide monetary incentives to producers to enroll herds in the TB certification programs by subsidizing the costs of testing by designated accredited veterinarians.

Resource Requirements:
Assumptions for accreditation tests of cattle herds:

- 1 million herds in US
- 5% characterized as purebred or seed stock producers (NASS expert)
- 10% would participate if costs subsidized
- Avg herd size 40 adult cattle
- Stop fee $80 per herd
- Test fee $8 per head

Annual estimated expense for cattle $2,000,000.00

Assumptions for Accreditation tests of cervid herds:

- 8200 herds in US (2003 APHIS survey)
- 25% would participate if costs subsidized
- Avg herd size 20 head (adjusted from 2003 APHIS survey)
- Stop fee $80 per herd

- Test fee $8 per head

Annual estimated expense for cervids $500,000.00

Resource Requirements: Indemnity costs for Post-mortem of CCT/gIFN Reactors (assuming TB negative population)

Cattle-5000 herds X 40 head X .02 CFT test suspects X .02 CCT test reactors X $3000 indemnity = $240,000
Cervids-2050 herds X 20 head X .05 SCT test suspects X .05 CCT test reactors X $2000 indemnity = $205,000

Resource Requirements: Costs for confirmatory testing of CFT test suspects
CCT test-assume current state/federal veterinarian staffing can do this work
GIFN assay-Cattle: assume half of CFT test suspects would be tested by gIFN rather than CCT test-4000 CFT suspects X .5 gIFN X $30 lab (kit plus personnel) = $60,000 testing plus shipping-5000 herds X .8 suspect/herd X .5 use gIFN X $40 shipping = $80,000 freight

Costs Associated with D7 (increasing number of Accredited Free herds)

Cattle herds	**$1,000,000.00**
Cervid herds	**$500,000.00**
CCT/gIFN testing of CFT suspects found during herd tests	**$1,350,000.00**
Total cost	**$2,850,000.00**

Action Item (D8):
Enhance veterinary Services standard reporting procedures for tuberculosis surveillance activities at all levels of the epidemiological delivery system.

Actions Required:
Develop standards and certification training for accredited veterinarians performing TB tests.

Insist that FSIS include in its data the number of adult and feeder cattle killed at slaughter. Also, request FSIS include suspicious pathology sent to FSIS laboratory.

Encourage NASS to routinely survey and report census estimates for the cervid industry on the same frequency as reports in other livestock.

Include documentation of conformance with slaughter surveillance goals and provide information back to FSIS and plants.

Require TB inspection on carcasses condemned at ante mortem inspection.

Evaluate the rate of submissions of suspected tissue samples for adult and feeder cattle.

Monitor the distribution of the diseases in animals and detect outbreaks in animal species at the area and field levels and evaluate the impact of prevention, control, and eradication measures and activities on defined animal populations. Require field units to monitor and carry out contact tracing and conduct full epidemiological investigations in recognized area outbreaks.

At the regional level, epidemiologists will monitor and report epidemiological findings in the states, and monitor and report on the performance of control and eradication programs.

At the national level, epidemiologists for Animal Health Programs will monitor and report on:

1. Tuberculosis epidemiology findings in the United States,
2. The performance of control and eradication programs, and
3. The planning of program activities (e.g., funding, regulations, and Uniform Methods & Rules updates).

National program epidemiologists will examine international trends for tuberculosis over time and make regional comparisons with the intent of revising import protocols as necessary and coordinating control efforts across international borders (e.g., Mexico).

Require all livestock species susceptible to bovine TB be identified with individual unique identification devices that can be traced back to the farm of origin.

Resource Requirements: Epidemiology and program management
2 additional positions on AHP staff, 1 additional position on each regional staff

Costs Associated with D8 (Add Veterinarian Support Staff for Program Management)

2 AHP staff veterinarians	**$220,000.00**
2 regional epidemiologists	**$180,000.00**
Total cost	**$400,000.00**

Action Item (D9):
Incorporate TB surveillance and tissue collection on animals being evaluated for other disease programs (On farm or renderer collections for BSE).

Action Required:

- Develop protocols to collect tissues from animals being presented for other surveillance programs (i.e. BSE and CWD).

Resources: Utilize positions funded by BSE and CWD surveillance programs. Additional costs for histopathology at regional contract labs that support BSE surveillance program:

- 260,000 non-ambulatory cattle surveillance
- 120,000 wild deer surveillance
- 25,000 captive cervid surveillance (assumes 10% annual mortality)

405,000 total examined

- Assume submissions at rate of 1% (any head or thoracic lymph node, or pulmonary pathology)
- 405,000 X .01 = 4050 submissions
- estimated expenses if histopathology done at regional lab 4050 submissions X $20 = $81,000

Costs Associated with D9 (Enhance TB surveillance during BSE sampling program)

Laboratory diagnostics for additional sampling	**$100,000.00**

Action Step - Information and Education (E)

Action Item (E1):
Develop and distribute new informational brochures or other media that clearly identifies specific risk factors and risk practices that potentiate the risk of acquiring bovine TB.

Actions required:
Identify and prioritize specific audiences to target for I&E.

Identify/assess suitability of existing TB literature and related references for potential I&E use.

Determine costs/identify cooperative funding sources to subsidize development of outreach materials through an extension service or equivalent.

Develop/distribute outreach materials as necessary to accommodate action item needs. Establish measures to gauge effectiveness of outreach efforts.

Resource Requirements:
Brochures - Design and print 3, 4-color brochures, 100,000 copies each
Design: $4,500.00
Printing (100,000 copies, ea.): $21,000.00
Subtotal: $25,500.00
Fact Sheets - Design and print 3, 1-color fact sheets, 100,000 copies each
Design: $450.00
Printing (100,000 copies): $9,000.00
Subtotal: $9,450.00
PowerPoint Presentation:
Design: $1,500.00
Duplication (100 CDs with insert cards/jewel cases): $750.00
Subtotal: $2,250.00
Web site (gateway of TB information):
Design: $5,000.00
Production (programming, HTML coding, 508-compliance): $15,000.00
Subtotal: $20,000.00
Travel:

Meeting/conference attendance: $11.800.00
Subtotal: $11,800.00

Educational Technology Specialist (GS-13):
Salary and Benefits – 75% time: $80,000.00
Subtotal: $80,000.00

Temporary Clerical Help - Fill materials requests, prepare paperwork for travel and procurement, compile and manage mailing lists
Salary: $21,000.00
Subtotal: $21,000.00

LPA Assistance (GS-11):
Salary and Benefits – 50% time
Subtotal: $60,000.00

Supplies - Computer equipment, peripherals, general office supplies, photocopying, video/photo duplications
Subtotal: $20,000.00

E1 TOTAL: $250,000.00

Action Item (E2):
Conduct a descriptive analysis of the dairy heifer-raising industry.

Background:
The growth of the dairy industry over the past 20 years in the United States has required that sufficient replacement dairy heifers be raised and marketed efficiently to replace adult, milking cattle frequently culled from the large, commercial dairy herds throughout the United States. Heifer-raising operations often numbering in the thousands of heifers have developed in many States. These operations usually gather and group heifers from a multitude of sources, and may specialize in raising them to various ages and weights before they move to another facility.

Documentation and geographic mapping of existing dairy heifer-raising facilities nationally, and a descriptive analysis of the numbers and types of heifers they contain is lacking. Having such information is critical if education efforts regarding risk factors and practices that promote spread of bovine tuberculosis and other diseases are to be focused toward this segment of the industry.

Actions required:
Identify and fund a resource to conduct and document a descriptive, epidemiologic survey of the dairy heifer-raising industry in the United States that includes the trend in movements of dairy heifers, and a geographic information system analysis.

Provide results of the descriptive analysis in a format that will allow educational information related to risk factors and practices that promote spread of TB to be shared with the dairy heifer-raising industry.

Resource Requirements:
VMO/Epidemiologist (GS-13)
Salary and Benefits: $124,300.00
Administrative Support (GS-6)

Salary and Benefits: $65,000.00
Supplies - Computer equipment, peripherals, general office supplies, photocopying, video/photo duplications: $10,700.00

E2 TOTAL: $200,000.00

Action Item (E3):
Develop and deliver continuing educational program for professional accredited veterinarians that clearly outlines the expectations industry and regulatory officials have of them when performing TB program activities.

Background:
Past successes in the TB eradication program have resulted in complacency in some segments of the veterinary community. Renewed efforts are necessary to inform and re-educate accredited veterinarians on their critical role in the TB eradication program.

Action required (E3.1):
Obtain funding and other resources to manage, develop, and deliver continuing educational programs for accredited veterinarians and other targeted veterinary populations, as specified in the actions below.

Resource Requirements (E3.1):
VS/PDS Training Specialist (GS-13)
Salary and Benefits: $100,000
Veterinary Medical Officer (GS-13)
Salary and Benefits: $124,300
Training Technician (GS-6)
Salary and Benefits: $65,000
Supplies - Computer equipment, peripherals, general office supplies, photocopying, video/photo duplications: $30,000.00

E3.1 Subtotal: $319,300.00

Action Required (E3.2):
Develop a continuing education CD-ROM with printed supplemental material that will include the following topics as a minimum:

- Current status and challenges related to bovine TB eradication in the US;
- Proper administration and reading of the intradermal tuberculin test;
- Use of the various tests used in the TB eradication program and the efficacy of each; and
- Requirements and responsibilities related to the reporting of tests completed and responses found.

Resource Requirements (E3.2.1):
Prepare a level 2 interactive CD-ROM for Producers, Federal and State veterinarians, and other stakeholders targeting TB current status and changes.
Design: $35,000.00
Contractor Cost: $7,000.00
Maintenance and Changes: $25,000.00

E3.2.1 Subtotal: $67,000.00.00

Action Required (E3.2.2):
Produce and mail Sample Handling & Submission CD-ROMs.

Resource Requirements (E3.2.2):
Duplication (1000 CDs with insert cards/jewel cases): $1,500.00
Postage & Handling: $8,500.00

E3.2.2 Subtotal: $10,000.00

E3.2 Subtotal: $77,000.00

Action Required (E3.3.1):
Initiate continuing educational outreach activities to State Veterinarians, state veterinary medical associations, and other veterinary organizations using products developed in second action.

Resource Requirements (E3.3.1): (Labor is split between this Action Required and Action Required in E3.3.2 below)
VMO/Epidemiologist (GS-13) – 50% time
Salary and Benefits: $60,000.00
Administrative Support (GS-6) – 50% time
Salary and Benefits: $30,000.00
Supplies - General office supplies, photocopying, video/photo duplications: $10,000.00

E3.3.1 Subtotal: $100,000

Action Required (E3.3.2):
In cooperation with State Veterinarians and AVIC's, initiate effort to identify and contact accredited veterinarians with below average record of reporting TB suspects. Individually contact and meet with these veterinarians to reacquaint them on the proper reading of intradermal TB test.

Resource Requirements (E3.3.2): (Labor is split between this Action Required and Action Required in E3.3.1 above)
VMO/Epidemiologist (GS-13) – 50% time
Salary and Benefits: $60,000.00
Administrative Support (GS-6) – 50% time
Salary and Benefits: $30,000.00
Supplies - General office supplies, photocopying, video/photo duplications: $10,000.00

E3.3.2 Subtotal: $100,000

Action Required (E.3.3.3):
Reserve a place on the agenda of the accreditation orientation session for all fourth year veterinary students to discuss the current reemergence of TB in the US. Implement a requirement as a condition of accreditation that all fourth year veterinary

students attend a wet lab on the proper administration and reading of an intradermal TB test.

Resource Requirements (E.3.3.3): Cost absorbed between Actions Required in E3.3.1 and E3.3.2 above

E3.3.3 Subtotal: $0.00

Action Required (E3.3.4):
Initiate outreach activities to consultants (non-accredited veterinarians, nutritionists, cooperative extension veterinarians and other animal husbandry professionals).

Resource Requirements:
VMO/Epidemiologist – 50% time
Salary and Benefits: $60,000.00
VS/PDS Training Specialist (GS-13) – 25% time
Salary and Benefits: $25,000.00
Administrative Support (GS-6) – 50% time
Salary and Benefits: $30,000.00
Supplies - General office supplies, photocopying, video/photo duplications: $5,000.00

E3.3.4 Subtotal: $120,000.00

Action Required (E3.3.5):
Provide TB information to the training organizations at PDS, NVSL, and CEAH for distribution/dissemination at major learning events.

Resource Requirements: (Cost absorbed between Actions Required #3 and #4 above)

E3.3.5 Subtotal: $0.00

Action Required (E3.3.6):
Develop and distribute a Veterinary Services Notice or Memorandum that establishes the policy and requirement that only designated accredited veterinarians who have received special training (as described in Action 8) in the application and reading of the tuberculin test will be approved to conduct TB testing in cattle or bison. Veterinarians currently accredited by USDA who want to continue to be approved to conduct tuberculin testing in cattle and bison without interruption must receive this special training within one year of the date of the VS Notice or Memorandum.

Resource Requirements:
None

E3.3.6 Subtotal: $0.00

Action Required (E3.3.7):
Continuing education requirement for designated accredited veterinarians: All designated accredited veterinarians must attend a TB program update every three years that will include a session on the practical application of the intradermal test, and

the use and efficacy of all tests used in the TB eradication program. These sessions will be taught by state/federal veterinarians. (This requirement should be consistent with provisions of the proposed changes in the veterinary accreditation program).

Resource Requirements:
Veterinary Medical Officer (GS-13)
Salary and Benefits: $124,300.00
VS/PDS Training Specialist (GS-13)
Salary and Benefits: $100,000.00
Training Technician (GS-6) – 50% time
Salary and Benefits: $35,000.00
Supplies - General office supplies, photocopying, video/photo duplications: $15,000.00]

E3.3.7 Subtotal: $274,300.00

Action Required (E3.3.8):
Incorporate into the standards for USDA veterinary accreditation the following education requirement for all veterinarians applying for accreditation to perform any regulatory activity related to food animal health certification:

New Educational Requirement: *Complete at least one "wet lab" tuberculin test application seminar prior to graduation from an accredited veterinary school, or one TB program update seminar that includes instruction on proper application of the tuberculin test and expected response rates before accreditation privileges to perform specific bovine tuberculosis eradication program activities is granted.*

Resource Requirements:
None

E3.3.8 Subtotal: $0.00

E3 TOTAL: $990,600.00

Action Item (E4):
Assist industry officials in delivering information about specific risk practices for acquiring bovine TB by presenting talks and seminars at local, state and national industry gatherings.

Action required (E4.1):
Develop educational materials specifically targeting this audience (CD-ROM, PowerPoint, video, etc).

(Materials developed under Action Item E1 will be used.

E4.1. Subtotal: $0.00

Action required (E4.2):
Enlist assistance of state and federal veterinarians in delivering presentations at industry meetings.

Resource Requirements:
Veterinary Medical Officer (GS-13) – 25% time
Salary and Benefits: $31,100.00
Administrative Support (GS-6) – 50% time
Salary and Benefits: $35,000.00

E4.2 Subtotal: $66,100.00

E4 TOTAL: $66,100.00

Action Item (E5):
Develop a training program that will prepare animal health and /or APHIS contract personnel to conduct blood and tissue sampling for bovine tuberculosis in cooperating slaughter plants and rendering facilities.

Background:
The recent finalization of the Blood and Tissue Sampling regulation in 9 CFR may provide APHIS with a tool which could enhance surveillance for bovine tuberculosis at slaughtering establishments and rendering facilities. This regulation allows APHIS to conduct blood and tissue sampling in certain facilities as needed in order to increase surveillance for specific diseases using contract or APHIS-employed personnel. These personnel would need to be specially trained in many aspects of gross pathology recognition, sampling techniques, identification collection, reporting, and slaughter plant protocol and procedures before being placed in such positions to conduct these activities.

Resource Requirements:
Veterinary Medical Officer (GS-13) – 50% time
Salary and Benefits: $60,000.00
VS/PDS Training Specialist (GS-13) – 50% time
Salary and Benefits: $50,000.00
Training Technician (GS-6) – 50% time
Salary and Benefits: $30,000.00
Supplies - General office supplies, photocopying, video/photo duplications: $30,000.00

E5 TOTAL: $170,000.00

Action Item (E6):
Provide funds to all state wildlife agencies to assist them in promoting measures, through information and education programs, to prevent tuberculosis transmission between wildlife and livestock in their respective states. This action item is linked to Strategy 2, Wildlife Management and Tuberculosis.

Resource Requirements:
No additional labor costs are involved
State funds: $5,000 x 50 states = $250,000.00

E6 TOTAL: $250,000.00

Action Item (E7):
Conduct information and education activities to assist Mexican officials in eradicating tuberculosis from all Mexican states that border the United States. This action item is linked to Strategy 6, Risk Mitigation, with respect to targeting the risk of TB exposure or infection of Mexican feeder cattle.

Resource Requirements:
Specific allocation TBD.

E7 TOTAL: $100,000.00

ACTION STEP SUMMARY - INFORMATION AND EDUCATION (E)

E1. Develop and distribute new informational brochures or other media that clearly identifies specific risk factors and risk practices that potentiate the risk of acquiring bovine TB.	**$250,000.00**
E2. Conduct a descriptive analysis of the dairy heifer-raising industry.	**$200,000.00**
E3. Develop and deliver continuing educational program for professional accredited veterinarians that clearly outlines the expectations industry and regulatory officials have of them when performing TB program activities.	**$990,600.00**
E4. Assist industry officials in delivering information about specific risk practices for acquiring bovine TB by presenting talks and seminars at local, state and national industry gatherings.	**$66,100.00**

E5. Develop a training program that will prepare animal health and /or APHIS contract personnel to conduct blood and tissue sampling for bovine tuberculosis in cooperating slaughter plants and rendering facilities.	**$170,000.00**
E6. Provide funds to all state wildlife agencies to subsidize their efforts to stop transmission of information and education activities to of tuberculosis from wildlife in their respective states. This action item is linked to Strategy 2, Wildlife Management and Tuberculosis.	**$250,000.00**
E7. Conduct information and education activities to assist Mexican officials in eradicating tuberculosis from all Mexican states that border the United States. This action item is linked to Strategy 6, Risk Mitigation, with respect to targeting the risk of TB exposure or infection of Mexican feeder cattle.	**$100,000.00**
TOTAL	**$2,026,700.00**

Action Step - Risk Mitigation (F)

Action Item (F1):
Reduce the risk of spreading tuberculosis by changing management practices and TB testing at dairy collection premises, and by TB testing dairy breeding cattle moving interstate from regions of risk.

Background:

Many industry practices potentially expose susceptible cattle to higher risk animals. Examples include mixing replacement heifers with terminal feeder cattle (including Mexican-origin steers and spayed heifers), and re-use on other farms of cull dairy cows from sale yards.

Action Required:
Provide personnel to annually certify all "moderate to large" premises where dairy calves and heifers are commingled from more than one source prior to freshening. Certification should require:

- Preventing fence-line contact of all dairy replacement or breeding cattle from all cattle maintained for non-breeding purposes.
- Keeping standardized records for a minimum of 5 years.
- Requiring permanent individual identification, allowing tracing to herd of origin, on all cattle entering and leaving premises.
- Requiring a negative official tuberculosis test within 60 days of movement out of the premises, in either interstate or intrastate commerce, regardless of status of state of origin, on all breeding cattle 6 months of age or older.
- Quarantining breeding cattle less than 6 months of age at the time of movement upon arrival at their destination, and require an official tuberculosis test when they are 6 months of age.

Require a negative official tuberculosis test on all breeding dairy cattle 6 months of age or older moving interstate from "regions of unacceptable risk". Dairy cattle less than 6 months of age at the time of movement shall be quarantined upon arrival in the state of

destination and require a negative official tuberculosis test when they are 6 months of age. Cattle from TB certified free herds are exempt from this interstate testing requirement.

Costs Associated with F1 (Management practices of dairy collection premises)

Certification Costs	Estimate need about 40 GS-7 positions across US	$51,139.44X40 = $2,045,577.60
CCT or Gamma Testing Costs	Number of Animals CCT= 2% of Number CFT Tests (2M*1.5 tests)	60,000 animals
	Cost of CCT (Gamma $60 or CCT $100= Avg. $80 per test) Number of tests (60,000) * $80	$4,800,000.00

Estimated Costs **$6,845,577.60**

Action Item (F2):
Reduce risk of spread of tuberculosis from Mexican cattle.

Background:
Although the numbers of infected Mexican steers and spayed heifers found at slaughter in U.S. plants has decreased in recent years, the level at which they continue to be found indicates that the U.S. is still importing infected cattle from Mexico. Therefore, cattle fed or pastured with these imported cattle are also at risk for being exposed to tuberculosis.

In addition, there is concern that states are not able to track the movements of imported cattle from Mexico. Prior notification of state of destination on cattle lots imported directly from Mexico is not consistent although required by USDA, APHIS, VS policy. Further, in many cases, cattle are diverted from their stated destination without sufficient follow-up by federal personnel.

Action Required:
Encourage states to require permits for all cattle moving into their state that originate from Mexico. Ensure the individual identification, premises of origin, port of entry, Mexican state of origin, and destination are recorded. Facilitate this by funding an electronic permit/health certificate program for all 50 states (costs included in A7).

USDA, APHIS, VS should consistently implement the November 2002 policy requiring notification of the state of destination when cattle are imported from Mexico - this requires no additional resources.

Provide oversight of Mexican cattle at cattle sorting facilities, and require a new Certificate of Veterinary Inspection, listing individual identification, to be issued before cattle leave the facility - may require personnel resources.

Investigate and follow-up on reported diversion of cattle from the destination listed on the import health certificate - may require personnel resources.

Require a 60-90 day quarantine period after entry into the United States, followed by an official tuberculosis test for any breeding cattle from Mexican states with lower status than modified accredited advanced. All such cattle must be physically separated by barrier from all other non-quarantined cattle during this period, including dairy cattle, breeding cattle, and other cattle.

Pre-import requirements for exhibition cattle, including roping steers, from Mexico will be the same as the requirements for breeding cattle. Upon entry into the U.S.A., exhibition cattle from Mexican states with lower status than modified accredited advanced will either be subjected to a 60-90 day quarantine period followed by an official tuberculosis test, or they will be subjected to testing by an official tuberculosis test on an annual basis prior to participation in exhibitions or events. All Mexican cattle participating in exhibitions or events must be accompanied by documentation the state of origin, date of import, and a certification of having passed the required post-entry quarantine and retest or, alternatively, certification of passing the annual test for the current exhibition year.

Maintain the ban on importing Mexican cattle that are genetically 40% or more Holstein until Mexican dairy cattle are no longer considered to be a tuberculosis risk for the United States.

Costs Associated with F2 (Reduce risk from Mexican cattle)

Electronic Permits	Cost included in A7	
CCT or Gamma Testing Costs	Number of Animals CCT= 2% of Number CFT Tested (50,000)	1,000
	Cost of CCT (Gamma $60 or CCT $100= Avg. $80 per test) Number of tests (1,000) * $80	$80,000.00

Estimated Costs **$80,000.00**

Action Item (F3): Assist Mexican officials in eradicating tuberculosis from all Mexican states that border the United States or that export cattle to the United States.

Background:
In the last couple years, herds infected with bovine tuberculosis have been newly discovered in all 4 southwestern Border States. In the past, an epidemiologic review of the tuberculosis problem centering in the El Paso, Texas area revealed that a U.S. herd had the greatest risk of becoming infected with bovine tuberculosis if it was in close proximity to known infected herds in Juarez, Mexico. The Mexican Government has limited funding for eradication activities and relies heavily on local cattlemen to contribute to program activities. Therefore, many dairies in Mexico continue to operate with a very high prevalence of bovine tuberculosis.

If bovine tuberculosis could be eradicated from Mexican states on the U.S. border and states that export cattle to the U.S., then the risk of introducing infection into the United States could be reduced. Mexico would require monetary assistance in a cooperative effort to eradicate bovine tuberculosis from the Mexican Border States and states exporting cattle to the United States.

Action Required:
The United States will assist Mexico by providing personnel to consult with Mexican officials, and assist with laboratory diagnosis, and epidemiological evaluation of bovine tuberculosis transmission. To facilitate this, USDA APHIS will fund 3 positions to assist the Mexican tuberculosis campaign. The positions will focus on laboratory support, improving animal health infrastructure, and epidemiological mentoring.

A team comprised of several individuals will be formed to provide ongoing mentoring of Mexican officials in the above areas through continuing interaction with particular Mexican states.

Cooperative tuberculosis research between the U.S.A. and Mexico will be promoted by encouraging U.S. researchers to develop collaborative agreements with Mexican researchers. The U.S. researchers with such collaborative agreements will be able to apply for USDA funds to support application of new technologies for combating bovine tuberculosis in the Mexican states, including field validation of experimental blood tests for cattle.

ADDITIONAL Costs for (F3) (Assist Mexico)

3 GS 12/13 positions	Terry Beals Figure which includes salary benefits, support costs= 104,457.44 per person	$313,372.32
Travel Costs for 3 individuals	Travel for 1st year of the program	$100,000.00
Mentoring Team Travel	For Groups traveling to Mexico	$100,000.00
Grant Money	For Field Test Validation	$200,000.00

Estimated Additional Costs **$513,372.32**